JMA/WMO WORKSHOP ON QUALITY MANAGEMENT IN SURFACE, CLIMATE AND UPPER-AIR OBSERVATIONS IN RA II (ASIA)

Svetlana Vandasheva,
head for Meteorology and climate department

Japan, 27-30 July, 2010

Geographic location

- Kyrgyz Republic is located at the eastern part of Central Asia between 39^0-43^0 N, 69^0-80^0 E. It has a boundary with Kazakhstan in the north, with Uzbekistan in the west, with Tajikistan in the south-west and with China in the south-east. State boundary follows to the natural divides – ranges of the high mountains and rivers.
- Its length is about 900 km from west to east and 410 km from north to south. Its square is 198,5 km^2.

Kyrgyzstan is a mountain country

- Kyrgyzstan is mountain country with the complicated relief and the wide variety of climatic conditions. It occupies west part of Tien-Shan and a small part of Pamir. Tien-Shan and Pamir consist of the mountain ranges extended mainly in the latitudinal and sub-latitudinal directions.

- The relief is differed by sharp altitude contrasts (from 500 to 7439 meters). About 90% of the territory of Kyrgyzstan lies above 1500 meters. Heights is gradually decreased from east to west.

BISHKEK is the capital of Kyrgyz Republic. It is located on 700-800 meters above see level. Official habitancy of the city is 787 738 human beeings.

Agency on hydrometeorology under Ministry of the emergency situations of Kyrgyz Republic (KYRGYZHYDROMET)

Kyrgyzhydromet is jurisdictional subdivisión of the Ministry operates in the aria of hydrometeorology and environment pollution level monitoring.

Main objectives of Kyrgyzhydromet

Main objectives:

- **Carrying out of monitoring of the environment for population protection from hydrometeorological disasters, damages prevention or reduction;**
- **Meeting the needs of community, executive authority in the hydrometeorological information and information of the environment pollutions;**
- **Organization and management for National Fund of hydrometeorological data;**
- **Systematic analysis and information fusion about meteorological conditions.**

Goals of Kyrgyzhydromet:

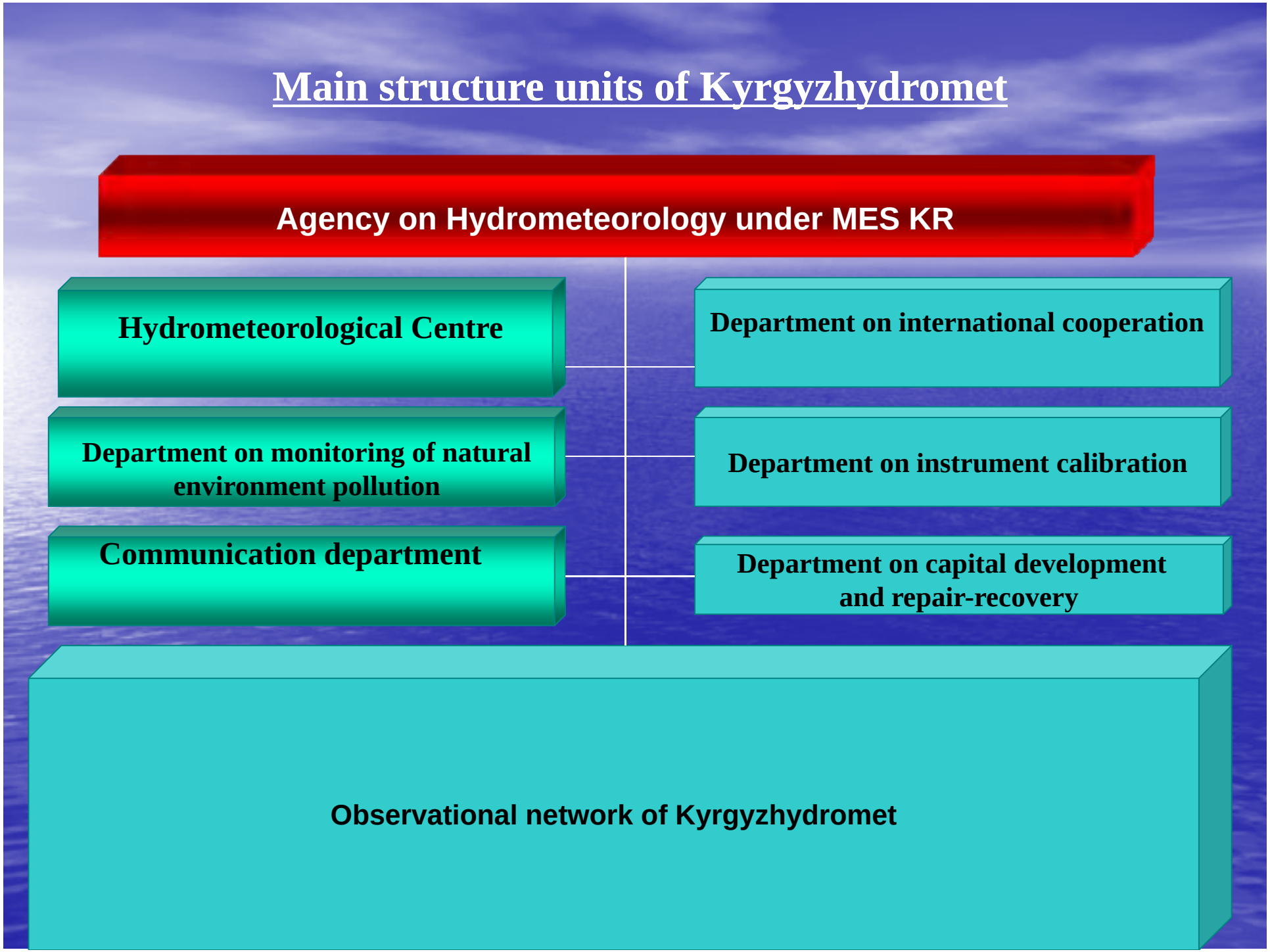
Provision of the:

- **hydrometeorological information,**
- **weather forecasts in the variety time scales,**
- **warnings about dangerous meteorological and hydrological events,**
- **estimations and forecasts of the quantities and qualities water sources .**

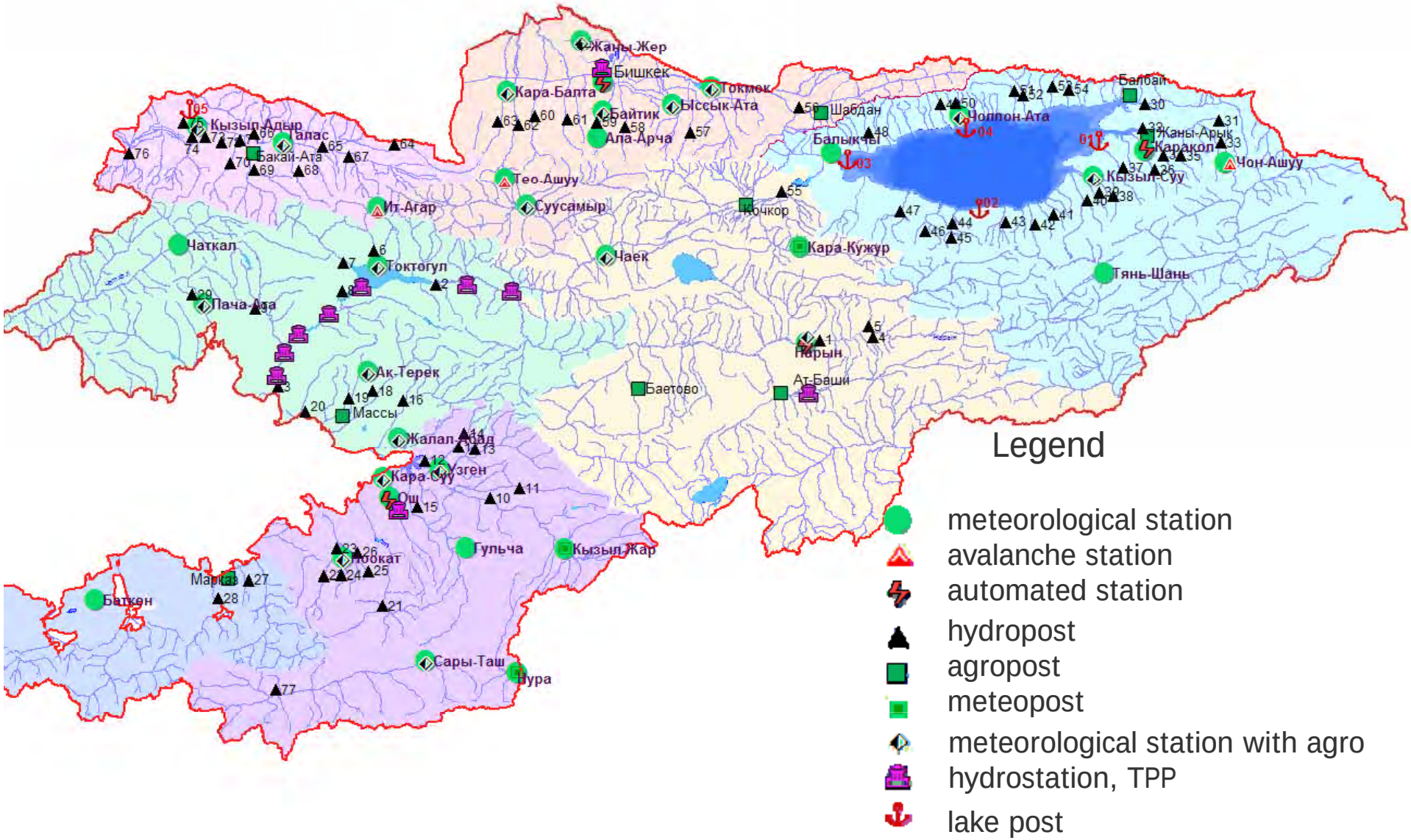
The most important functions of Kyrgyzhydromet are:

- gathering;
- archivation;
- interpretation of the climatic and hydrological data

Main structure units of Kyrgyzhydromet



Scheme of the Observational network

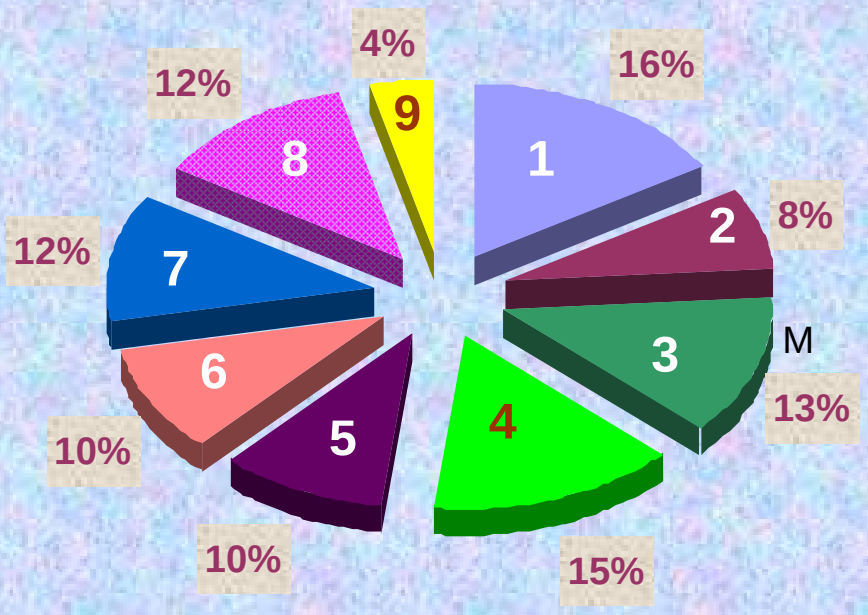


Providing of hydrometeorological information

- Kyrgyzhydromet provides hydrometeorological and hydrochemical information based on analysis of data received from meteostations and hydroposts , information about existing and forthcoming hydrometeorological conditions for policy makers: Government, Emergency situations ministry, Ministry of agriculture and water management, Energy ministry, business units. Thereby Kyrgyzhydromet contributes to sustainability of Kyrgyz Republic.

- Acknowledgment of the hydrometeorological servicies is increased in recent years. It's due to growth of frequency of the hydrometeorological dangerous events.

Hydrometeorological services



1. Emergency situations ministry
2. Designing and construction
3. Energy ministry
4. Ministry water management
5. Transport
6. Mass media
7. Government
8. Ministry of agriculture

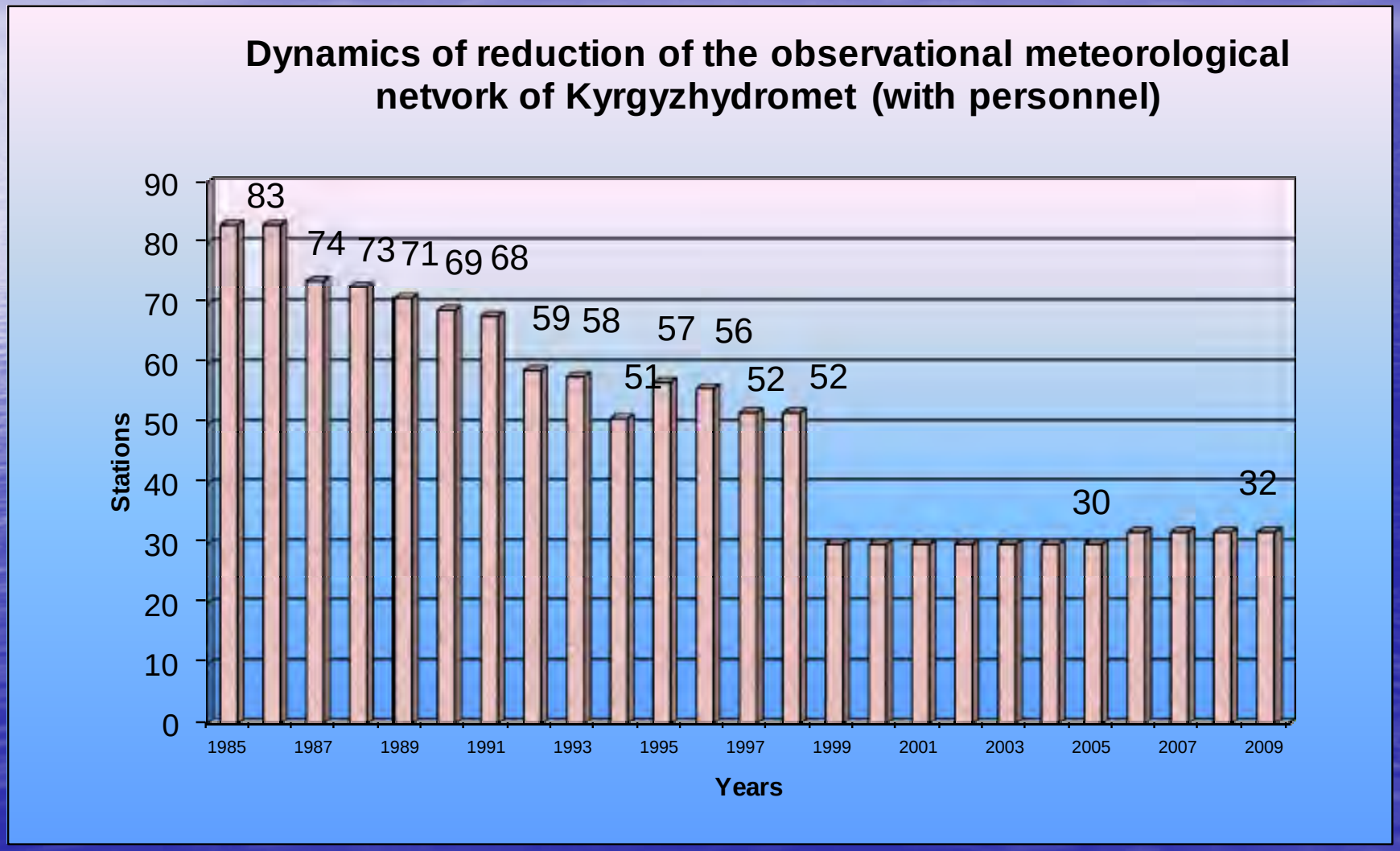
Problems of the reduction of the observational network

- Degeneration of the weather, hydrological and agrometeorological forecasts, and warnings quality due to observationl network reduction.
- Reduction of the observational network has a negative effect for rational utilization of climate and water resources on national and regional levels.

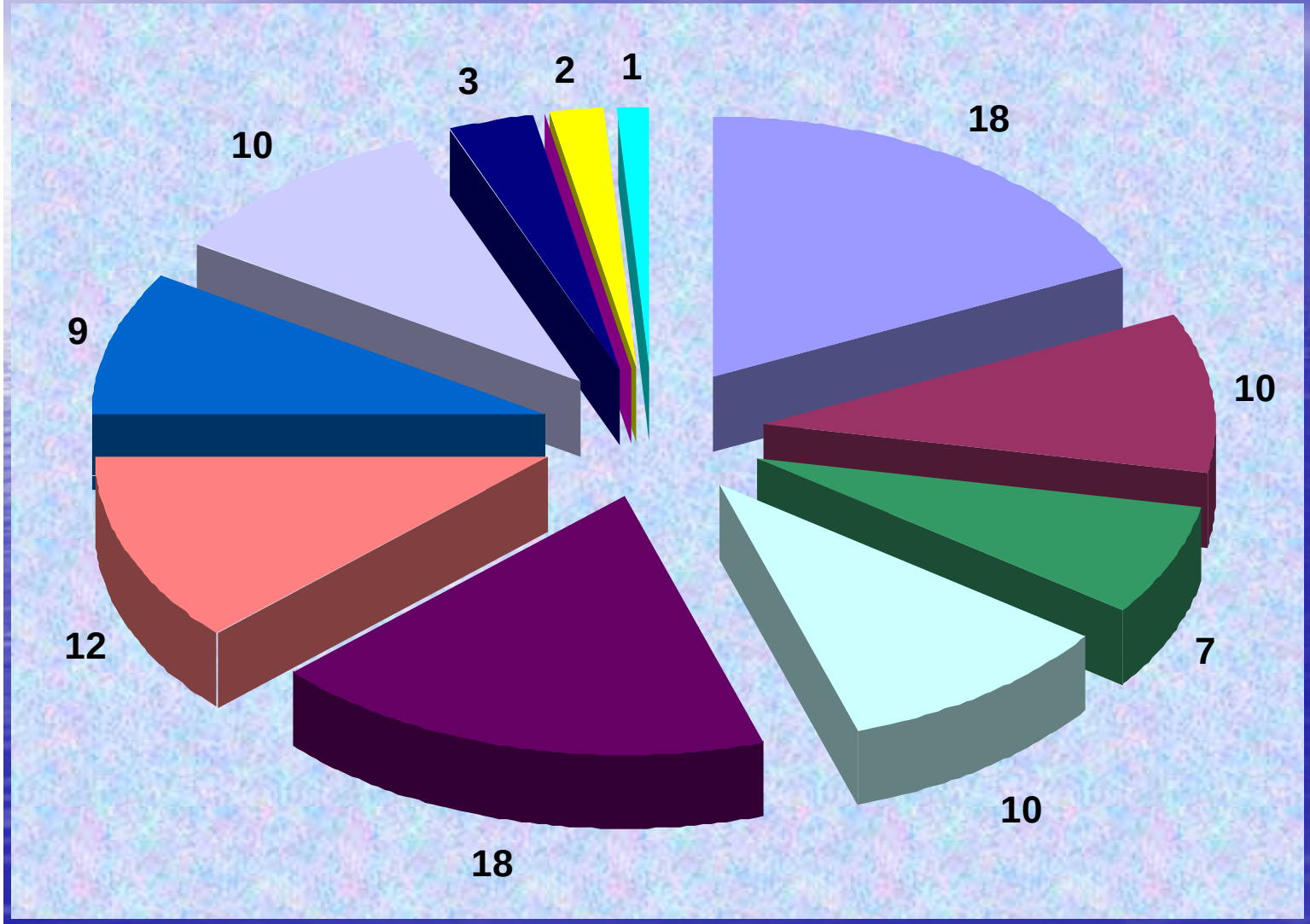
Reduction of the observational network:

meteorological stations - from 83 to 32 (on 61%),

aerological network - from 3 to 1 station, but it doesn't work because of lack of radio sounders

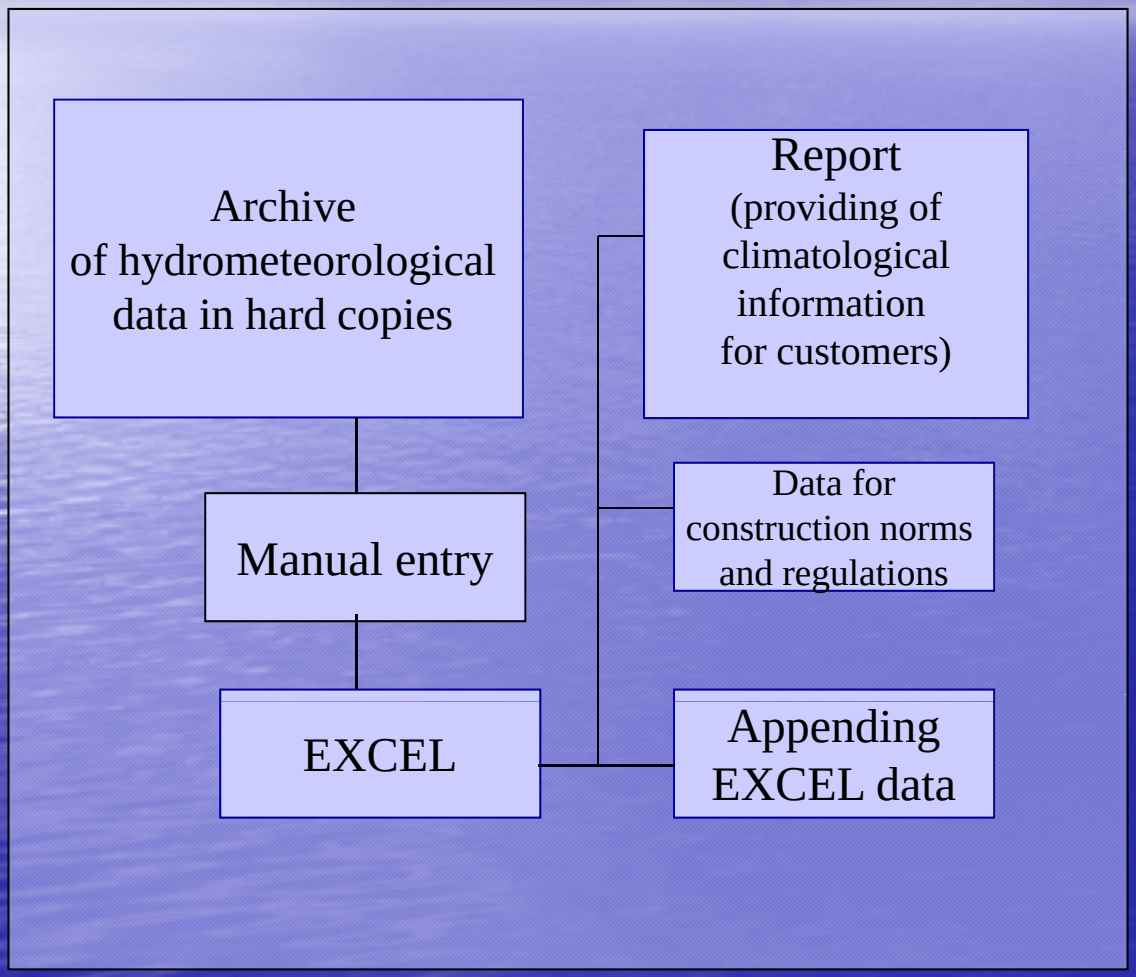


Ratio of meteostations (%) with weather sequence of variouse occurences .



1-10 years (18%)
11-20 years (10%)
21-30 years (7%)
31-40 years (10%)
41-50 years (18%)
51-60 years (12%)
61-70 years (9%)
71-80 years (10%)
81-90 years (3%)
101-110 years (2%)
111-120 years (1%)

Current status of hydrometeorological data



- **90 % of meteorological information is stored in hard copies.**
- **Data processing is executed with EXEL because of lack DataBase software (e.g. Oracle&Cliware)**

The positive moment in the Kyrgyzhydromet's activities is dynamic international cooperation under World Meteorological Organization (WMO) and Intergovernmental Council on hydrometeorology of CIS.

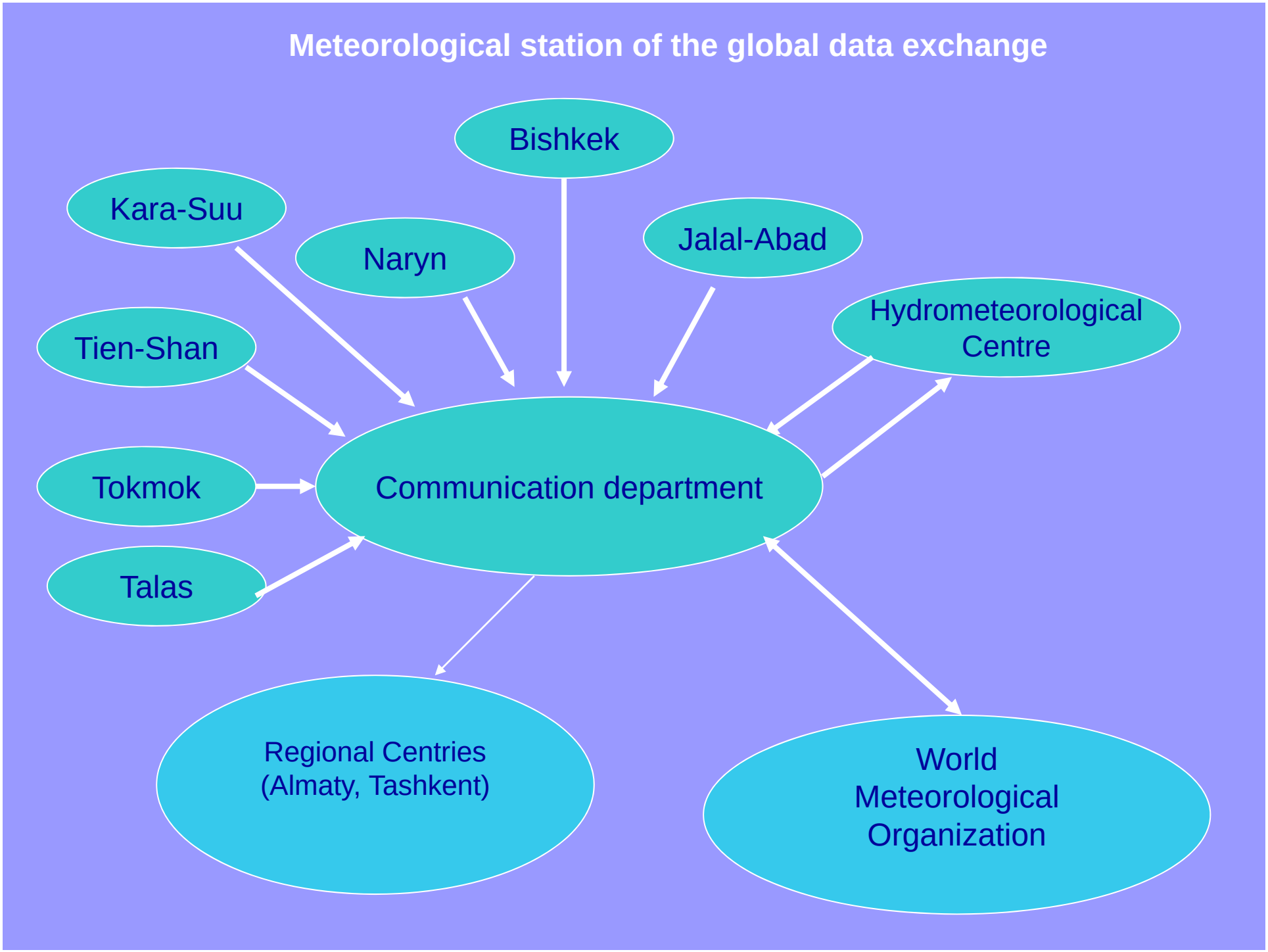
Under this cooperation the main spending on the preparation of the synoptic material for weather forecasts and warnings are supported by hydrometeorological services of Uzbekistan, Russia and Kazakhstan. Kyrgyzhydromet has o free access to this material.

The regional exchange of the information about forthcoming dangerous hydrometeorological events is carried out under bilateral arrangements.

CURRENT STATUS OF THE SURFASE SUBSYSTEM OF THE GLOBAL OBSERVATIONAL SYSTEM IN REGION-II

	RBSN	RBCN	GSN	Manned station	AWS*
number		36982, 38345, 38353, 38616	2 (36974, 38353)		

Observations on the meteorological stations are carried out in standard time 00, 03, 06, 09, 12, 15, 18, 21 (UTC)


Meteorological station of the global data exchange
Bishkek
Kara-Suu
Naryn
Jalal-Abad
Hydrometeorological Centre
Tien-Shan
Tokmok
Communication department
Talas
Regional Centries (Almaty, Tashkent)
World Meteorological Organization

Observable parameters and instrumentes

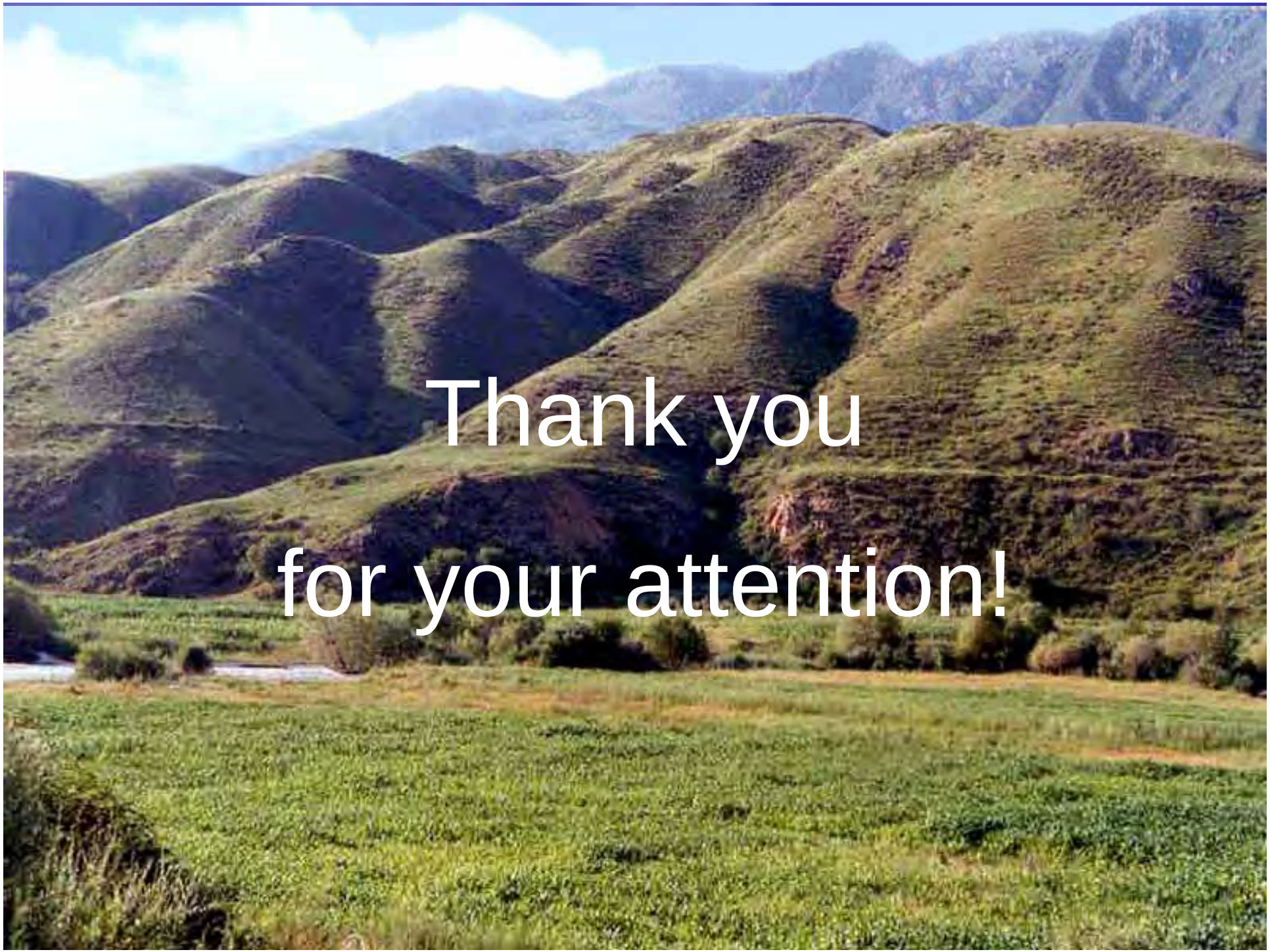
N	Meteorological parameters	Meteorological instruments
1	Air temperature	Meteorological thermometers (maximum, minimum, in time)
2	Air pressure	Mercury or digital barometer
3	Precipitation	Precipitation gauge of Tretiakov
4	Relative humidity	Hygrometer
5	Wind speed and direction	Wind vane with light or heavy desck
5	Snow depth	Snow scale
6	Soil temperature	Meteorological thermometers (maximum, minimum, in time)

Actions needed for improvement of functional abilities of observed data quality management and more effective data usege

- Rendering of assistance on repair and reconstruction of hydrometeorological stations and posts;
- Rendering of assistance in acquisition of the software and hardware complex Oracle&Cliware for implementation of high technology in Kyrgyzhydromet;
- Rendering of assistance on the implementation Oracle&Cliware and personnel tranings;
- Resumption of the upper-air sounding and rendering of assistance in acquisition of expendable materials - radio sounders and и balloons .

Expectations from the above listed actions:

- **strengthening of the potential of Kyrgyzhydromet;**
- **improvement of the hydrometeorological monitoring and environment monitoring;**
- **improvement of the weather foresast's accuracy.**


Thank you
for your attention!